OPERATING INSTRUCTIONS
MODELS 170, 171
REGULATED POWER SUPPLIES

FOR SERIAL # 185

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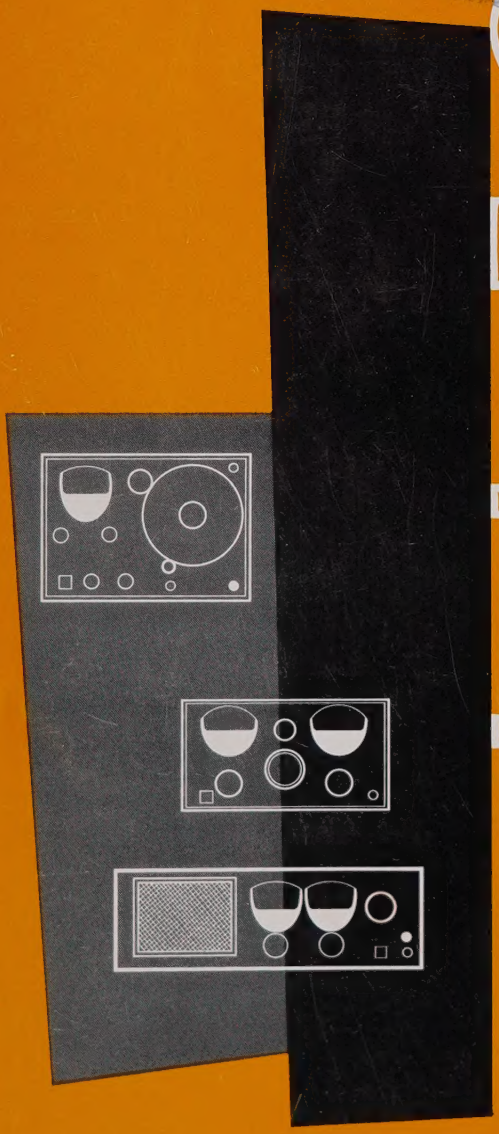

QTL

- REGULATED POWER SUPPLIES
- ELECTRONIC INSTRUMENTS

Quan-Tech
LABORATORIES INC.
BOONTON, N. J.

OPERATING INSTRUCTIONS
MODELS 170, 171
REGULATED POWER SUPPLIES

FOR SERIAL # 185

QUAN-TECH LABORATORIES, INC.

60 PARSIPPANY BLVD. BOONTON, NEW JERSEY

TELEPHONE: DE 4-8500

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MODELS 170, 171

REGULATED POWER SUPPLIES

GENERAL:

The Quan-Tech Regulated Power Supplies, Models 170 and 171 are extremely compact, closely regulated supplies. The two models are similar, differing primarily in their output current. The Model 170 provides an output current of 0.25 amp; the Model 171, an output current of 0.5 amp.

Both the Model 170 and 171 are available in three styles, as differentiated by the suffix letter following the model number:

Suffix "B" indicates the bench model, equipped with 3-wire line cord, front panel On-Off switch and calibrated output voltage control.

Suffix "C" indicates models having input and output connections through a standard octal plug, screwdriver output voltage adjustment, and provision for remote programming.

Suffix "T" indicates models having input and output connections at a terminal strip, and a screwdriver output voltage adjustment.

SPECIFICATIONS:

170 SERIES

INPUT VOLTAGE:		105-125V, 50-60 cycles
OUTPUT VOLTAGE:		10-32 VDC
OUTPUT CURRENT:		0.25 Amp.
REGULATION:	LINE,	Less than 3 Millivolts
	LOAD,	Less than 3 Millivolts
TRANSIENT RESPONSE:		Less than 50 Microseconds
RIPPLE:		Less than 250 Microvolts RMS
INTERNAL IMPEDANCE:		Less than 0.01 Ohm in series with 3 microhenries.
TEMPERATURE RANGE:		0-50° C.
OVERLOAD PROTECTION:		Electronic Protection, short circuit proof.
DIMENSIONS:		Height 3", Width 4", Depth 5"
WEIGHT:		3 Pounds

171 SERIES

OUTPUT VOLTAGE:	10-32 VDC
OUTPUT CURRENT:	0.5 Amp.
TEMPERATURE RANGE:	0-40°C. for bench use; 0-50°C. with suitable heat sink.
DIMENSIONS:	Height 3-1/2", Width 5", Depth 5-1/2"
WEIGHT:	5 Pounds

Balance of specifications as listed for 170 Series.

OPERATION:

The Models 170 and 171 should be provided with adequate ventilation. Since maximum internal dissipation is encountered at high line voltage, minimum output voltage, and maximum output current, the maximum safe ambient temperature is dependent on operating conditions. We will be glad to advise you on maximum temperatures for specific applications. Under short circuit conditions, the output current drops to approximately half the maximum output current, thus reducing dissipation.

The Models 170C and 171C may be remotely programmed over their entire output voltage range at approximately 40 ohms per volt by following the directions on the nameplate.

MAINTENANCE AND REPAIR:

Most of the components in the Models 170 and 171 are standard commercial components available locally. Special parts can be obtained from Quan-Tech Laboratories.

The variable adjustments are available by removing the six screws holding the bottom plate. The printed circuit board may be completely withdrawn for service by removing the bottom and rear partition.

In replacing components on the printed circuit board, the iron should be only hot enough to make a clean solder connection. Avoid pressure that might push the copper away from the board while hot.

Typical voltage values are indicated on the schematic diagram. Moderate variations may be expected from unit to unit, but large variations or polarity reversals indicate trouble.

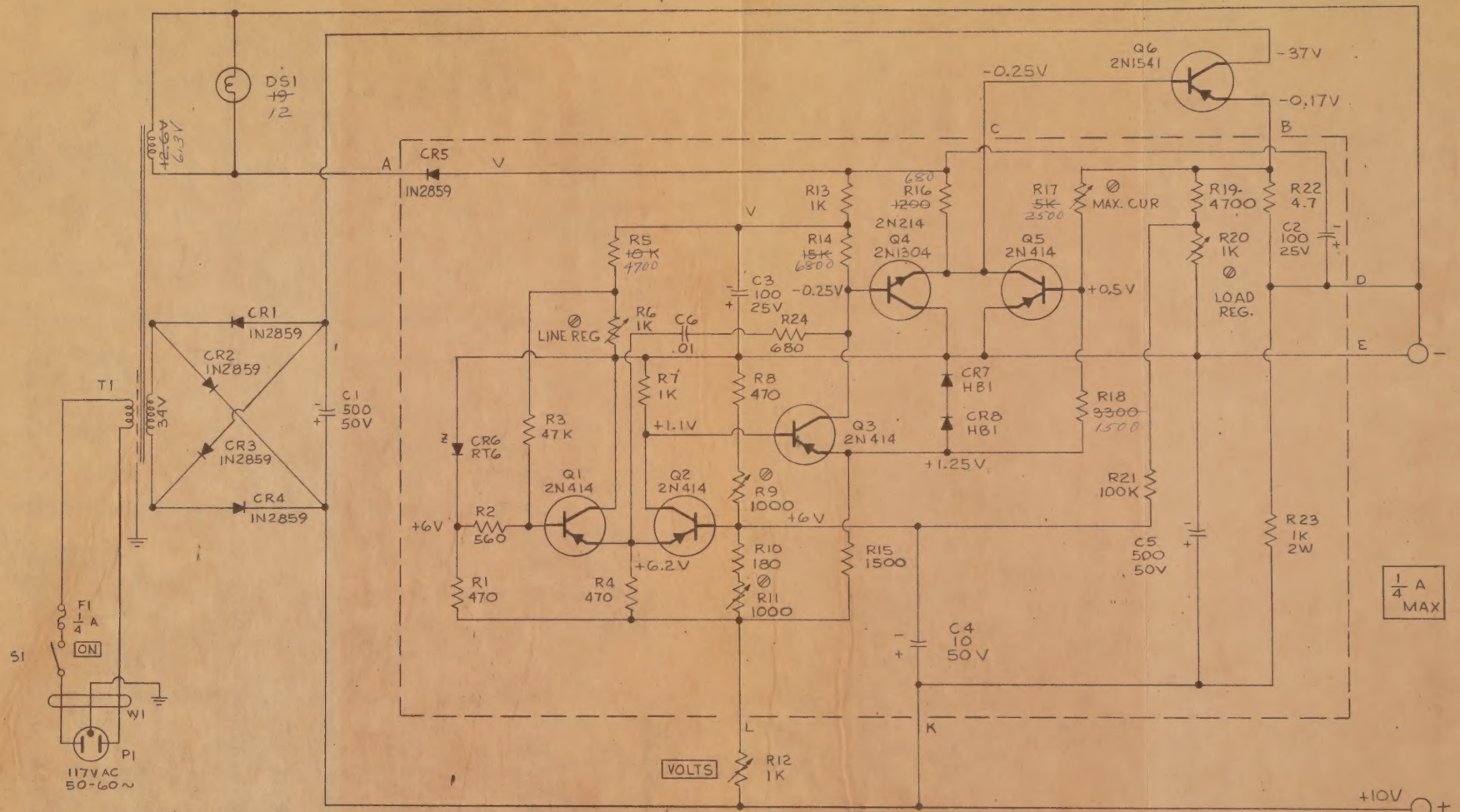
CIRCUITRY:

The Power Supply circuit comprises:

1. The main rectifier and filter.
2. A bias rectifier and filter.
3. A temperature compensated transistor regulator with zener diode reference.
4. A transistor circuit that limits the maximum output current.

Complete overall degeneration and proper compensation provide extremely close regulation, low output impedance, and excellent transient response.

A fuse is provided in the primary of the power transformer in the event of component failure. The Model 170 uses a 1/4A slow-blow, and the Model 171 a 1/2A slow-blow.



LEGEND

K = 1000

* = FACTORY SELECT

⌀ = SCREW DRIVER ADJUST

▭ = FRONT PANEL CONTROL

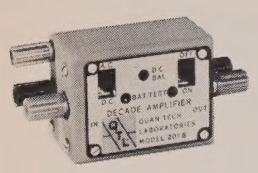
UNLESS OTHERWISE SPECIFIED
ALL RESISTANCES IN OHMS
ALL RESISTORS 1/2 WATT
ALL CAPACITANCES IN MICROFARADS

NOTE:
1. TYPICAL VOLTAGES MEASURED FROM NEGATIVE OUTPUT TERMINAL.
2. LINE VOLTAGE 117 V, OUTPUT SET TO 10 VOLTS, NO LOAD.

SCHEMATIC
POWER SUPPLY
MODEL 170-B

B-1984 · D

QUAN-TECH INSTRUMENTS



Model 201-B DC-Coupled Decade Amplifier

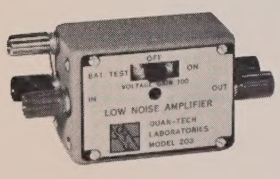
Highly compact and fully self-contained, the Model 201-B is a stable ac and dc amplifier providing a controlled gain of 10 over a frequency range of dc to 1 MC (±0.5db). Built in battery-condition test indicator. Two or more Model 201-B's may be plugged together in series for greater gain.

Price: $95.00

Model 202 Isolation Amplifier

Provides dc and capacitive isolation between input and output ter minal pairs. When used with voltmeter, oscilloscopes etc., permits accurate, safe, off-ground measurements. Frequency response: 30 cps to 100 kc (±0.5db). Voltage gain, 1, 0.1, 0.01, 0.001. Battery operated; fully self-contained. Built-in battery condition indicator. Input-to-output effective capacitance, less than 4 mmf. In-phase signal rejection 5000/1 at 100 kc and 10k ohm generator.

Price: $155.00



Model 203 Low-Noise Amplifier

Compact, very low-noise ac amplifier with controlled gain of 100. Frequency response flat from 30 cps to 100 kc (±0.5db); down 3 db at 500 kc. Equiv. noise, full bandwidth, 5 μv RMS, input shorted. Narrow band noise approx. 0.005 μv/cycle above 1 kc. Battery operated; fully self-contained; built in battery condition indicator.

Accessory Adaptor plugs:—See Model 201-B above.

Price: $125.00

Model 317 Amplitude Distribution Analyzer —

Establishes the amplitude-probability distribution of a random signal; for example, to determine threshold requirements, false alarm probabilities, etc. Frequency range: 5 cps to 0.5 mc; Amplitude ranges: 100%, 10% and 1% full scale accuracy. Output to drive counter at front panel. Size 8½"(h) x 5" (w) x 6¾"(d).

Price: will advise

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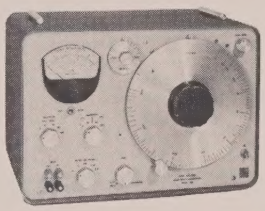
Model 301 AC Microammeter

Highly versatile ac current meter providing low input impedance, very high sensitivity, and isolation from ground for low-level current measurements without disturbing circuit under test. Signal output permits display of current waveforms on oscilloscope. Ideal for transistor or magnetic circuit analysis. Sensitivity: With insertion probe, 3 ua to 100 ma full scale; with clamp-on probe, 300 ua to 100 ma, full scale. With 10-amp clamp-on probe (supplied separately) 300 ua to 10 amps.

Price: $290.00

Accessory 10-amp clamp-on probe and connector. **Price: $ 65.00**

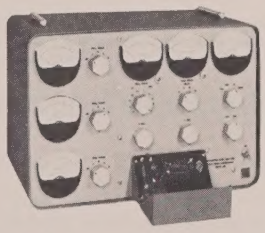
Model 303 Wave and Noise Spectrum Analyzer



Designed especially for use in ultrasonics and noise spectrum analysis. Selection of four constant bandwidths; i.e., 10 and 30 cycles (round top), 100 cps and 1 kc (flat top). Frequency range 30 cps to 100 kc, ±300 cps vernier. Sensitivity: 100 μv to 300 v full scale. Analog outputs provided for external monitoring. Sensitivity of 1 μv full scale with Quan-Tech Model 203 amplifier.

Price: $1300.00

Model 310 Transistor Noise Analyzer



Provides simultaneous analysis of transistor noise at three frequencies. System automatically corrects for variations in transistor gain. Beta, Icbo and Iebo are also included—providing measurements of essential transistor characteristics in one instrument.

Price: $1800.00

Model 315 Resistor Noise Test Set

For precise, quantitative measurement of noise generated as a result of current passing through a resistor. Tests any resistor from 100 ohms to 22 megohms; conforms to recommended specifications of National Bureau of Standards for resistor noise measurements. Tests diodes and other two-terminal networks as well. Outputs provided for external monitoring or for data processing.

Price: $1550.00

We welcome requests for information regarding specific applications of Quan-Tech instruments, amplifiers and other products.

Prices and specifications are subject to change without notice. Prices noted are f.o.b. Boonton, N.J., USA.

QUAN-TECH POWER SUPPLIES

Transistorized Power Supplies

A series of compact, lightweight power supplies featuring high regulation and voltage metering. The Model 104B (shown) also includes current metering. Regulation for models 101 and 105, 0.25%; the remaining models, 0.1% regulation. Electronic overload and short-circuit protection.

Model 101	0- 8 VDC, 0-2 amps	Price: $175.00
Model 102	0-14 VDC, 0-1 amp	Price: 165.00
Model 103	0-30 VDC, 0-½ amp	Price: 165.00
Model 104B	0-50 VDC, 0-1 amp	Price: 365.00
Model 105	0-50 VDC, 0-¼ amp	Price: 185.00
Model 108	0-32 VDC, 0-½ amp	Price: will advise

100 SERIES

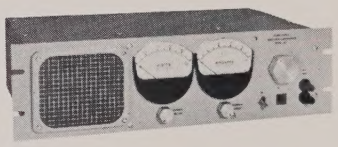
Model 104B

Precision Power Supplies

The 120 Series of precision, solid-state power supplies is characterized by 0.01% regulation. Ripple is less than 500 μvolts, rms. Outstanding features are output voltage and current metering, overload and short circuit protection circuitry, preadjustment of current levels, and remote error sensing.

Model 121	0.1-15 VDC, 0-5 amps	Price: $435.00
Model 122	0.1-36 VDC, 0-3 amps	Price: 445.00
Model 123	0.1-50 VDC, 0-2 amps	Price: 460.00
Model 124	0.1-50 VDC, 0-5 amps	Price: 560.00

120 SERIES



Model 124

Constant Current Supply

Provides constant output current variable over a wide range, independent of voltage across the load. Ideal for transistor or diode testing, potentiometer noise measurements, strain gage applications, etc.

Price: $290.00

OUTPUT: 0.5 to 500 ma. DC in three ranges: 0.5 to 5 ma; 5 to 50 ma; and 50 to 500 ma. Maximum output 20 volts.
POWER INPUT. 105-125 volts, 50-60 cycles, 35 watts.

MODEL 151B

Modular Power Supplies

The 170 Series are extremely compact, solid-state power supplies offering excellent operating characteristics *at unusually low cost.* All models are available in 3 configurations: Suffix B for bench use, Suffix C with all connections through octal plug, and Suffix T with terminal strip. All models regulated to less than 3 millivolts, line or load. Ripple is less than 250 μvolts, rms.

Model	Output Voltage	Output Current	Dimensions	Price
170	10-32	0.25a	3"(h)x4"(w)x5"(d)	$ 98.00
171	10-32	0.50a	3.5"(h)x5"(w)x5.5"(d)	123.00
172	0-32	0.20a	3"(h)x4"(w)x5"(d)	105.00
174	0-32	0.40a	3.5"(h)x5"(w)x5.5"(d)	129.00

170 SERIES

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In addition to the above standard units, Quan-Tech Laboratories produces custom-designed power supplies for specialized applications. We invite the opportunity to offer consultation on your special power supply problems. Address inquiries to the Power Supply Division, at the address below.

The Instrument Division of Quan-Tech Laboratories produces equipment for the measurement and analysis of component and system noise, as well as specialized amplifiers for instrumentation. For details, see section 2900.

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